

(12) UK Patent Application (19) GB (11) 2 050 900 A

(21) Application No 7921562
(22) Date of filing 20 Jun 1979
(43) Application published
14 Jan 1981

(51) INT CL³
B25B 23/00
(52) Domestic classification
B3N 9J1

(56) Documents cited
GB 1037010
GB 912058
GB 671087

(58) Field of search
B3N

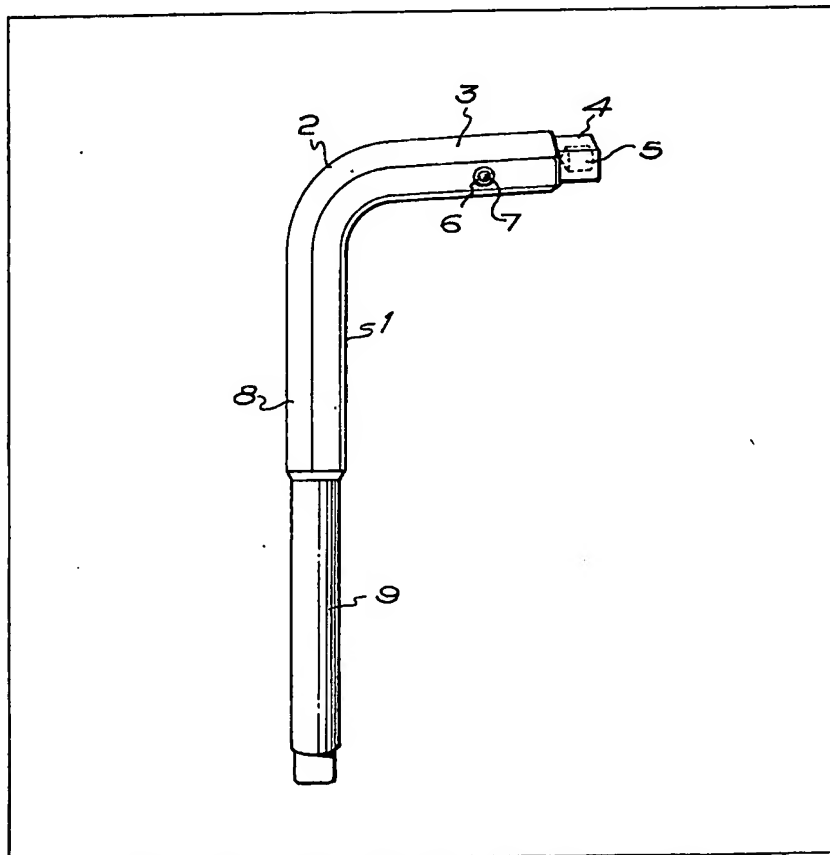
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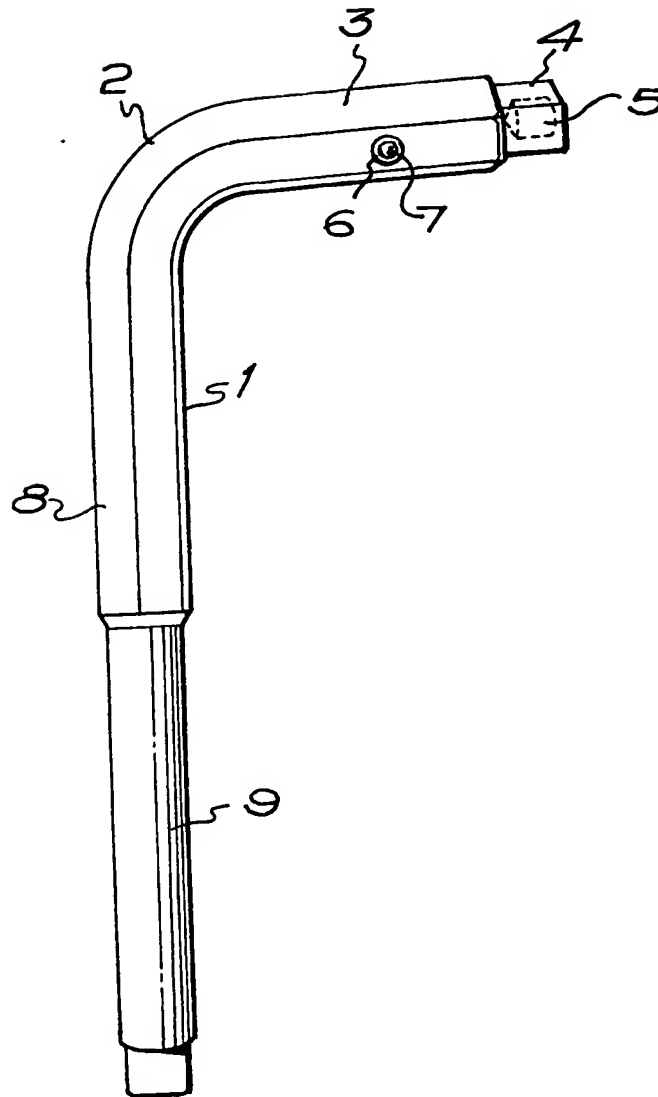
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(54) Internal spanner

(57) An internal spanner comprises a bar of hexagonal cross-section bent into a substantially L-shaped configuration, the shorter leg 3 of which is formed with a squared end 4 with an axial blind bore 5, and provided on the hexagonal part with a stop in the form of a spring pin 6 in a bore 7 to limit penetration of the leg into a hexagonal bore. Alternatively the stop is a threaded grub screw or a welded washer. The longer leg 8 has its end part machined to provide a circular cross-section a and may have a square end.



GB 2 050 900 A



SPECIFICATION

Internal spanner

- 5 This invention relates to an internal spanner, i.e. a tool having polygonally facted end for engaging inside a correspondingly shaped and dimensional aperture. Such apertures are found for example in valve tails and radiator plugs, and such tools are
- 10 accordingly suitable for disengaging and replacing such parts.
- The so called 'Alan Key' is such a tool, and consists of a bent hexagonal bar one end of which can be inserted in a hexagonal hole, and the other
- 15 end used as a lever for applying force thereto. British patent specification 1326010 describes a modification of the Alan Key whereby each end of a bent hexagonal bar is provided with a square cross-section end part for use in square apertures. This
- 20 form of key can be used on both hexagonal and square apertured parts, but whilst there is a clear limit to its penetration into a square aperture, the key can be inserted into a hexagonal aperture up to the bend in the tool, as of course is also the case with the
- 25 Alan Key. Some designs of radiator however have internal fins which adjacent the plug have a cut-out part. However if a key is pushed too far in, it may cause damage to the fins and thus cause a leak in the radiator.
- 30 It is an object of this invention to provide an internal spanner which cannot be pushed an excessive distance into a radiator.
- In accordance with the invention, a stop is provided on the end of the key, on the hexagonal part, at
- 35 a desired distance from the end.
- This stop may be in the form of a lateral pin spring dowel received in a blind bore in one face of the tool.
- In a typical example, the squared end of a key may extend 1 cm. from the end, and the leg of the key
- 40 forming the end be 6 to 7 cms. long. The stop is typically 3 to 3.5 cms from the end.
- Preferably, a handle is comprised by a part of the tool bent substantially at right angles to the leg having the stop.
- 45 This handle is preferably provided with a round cross-sectioned end part, so that if inserted into an aperture it cannot cause internal damage on being twisted.
- Alternatively the handle end could be formed with
- 50 a different tool, or a similar arrangement of squared end stop for use with apertures of a different size.
- A preferred embodiment of the invention will now be described by way of example with reference to the accompanying drawings, which is a view of an
- 55 internal spanner according to the invention.
- As shown in the Figure, an internal spanner is formed from a bar of hexagonal cross sectioned metal 1, bent at 2 to form an L-shape. The shorter leg
- 3 is formed at its extremity with a square cross-sectioned end part 4 for use as a tool for square
- 60 apertures and having a blind bore 5 (dotted lines) in its end face to enable the tool to be inserted without damage to any valve pins which may be present.
- This end part 4 extends over about 1 cm; while the
- 65 next 2 to 2.5 cms. of the hexagonal part of the leg

forms a tool for engaging hexagonal apertures, limited by a stop in the form of a spring pin 6 in a bore 7: This limits the distance to which the tool end can be inserted.

- 70 The other longer leg 8 has its free end machined to provide a circular cross-section handle part 9 which if inserted into a plug aperture in a radiator would cause no damage. Since it has no facets to snag internal pins.
- 75 Other forms of stop could be used, such as a grub screw in a tapped bore, or a washer welded into place.

CLAIMS

- 80 1. An internal spanner consisting of a hexagonal cross section bar bent into a substantial L-shape, and having one leg provided with a square cross-section end, and on the hexagonal part of the said one leg, a
- 85 stop to limit penetration of the spanner into an aperture.
2. A spanner according to claim 1 wherein the stop is in the form of a lateral spring pin dowel received in a blind bore in one face of the said one
- 90 leg of the tool.
3. A spanner according to claim 1 or 2 wherein the other leg of the L-shaped bar is provided with a round cross-sectioned end part.
4. A spanner according to claim 3 wherein the
- 95 round cross-sectioned end part terminates in a squared end.
5. An internal spanner substantially as hereinbefore described with reference to the accompanying drawing.

Printed for Her Majesty's Stationery Office by Croydon Printing Company Limited, Croydon Surrey, 1980.
Published by the Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.